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THE

Municipality of George Town, PENANG.

Straits Settlements.



HEALTH OFFICER'S ANNUAL REPORT

FOR THE YEAR 1938

PRICE 50 CENTS PER COPY.

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1939

The Criterion Press Co., Ltd.
Penang.



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STATISTICAL SUMMARY

Situation	Lat 5° 25' N., Long. 100° 20'E.
Average Elevation above L.W.M.O.S.T.	Town area 12 feet 6 inches. Suburban area 25 feet 0 inch.
O. S. Tides and fall .....	..	..	9 feet 0 inch.
Rainfall 1938 (average of three readings within Municipal limits) .....	..	..	100.83 inches
Average annual rainfall for preceding 58 years (including 1938) at the Prison .....	..	..	108.24 inches
Rainfall for 1938 at the Prison .....	..	..	104.04 inches
Mean Temperature 1938 (observed at 7 a.m.) .....	..	..	75.9° F.
Mean Temperature (observed at 1 p.m.) .....	..	..	87.0° F.
Mean Maximum Temperature 1938 .....	..	..	89.1° F.
Mean Minimum Temperature 1938 .....	..	..	74.2° F.
Absolute Maximum Temperature 1938 .....	..	..	94.0° F.
Absolute Minimum Temperature 1938 .....	..	..	68.0° F.
Total area of Penang Island .....	..	..	108 square miles
Area within Municipal limits .....	..	..	9.13 square miles or 5,845 acres.
Estimated population (mid-year) .....	..	..	171,988
Density of population .....	..	..	29.42 per acre
Crude death rate .....	..	..	20.55 per mille.
Infant mortality .....	..	..	106
Birth rate .....	..	..	36.87 per mille.
Sterling equivalent of Straits Dollar .....	..	..	2s. 4d.

STAFF OF THE HEALTH DEPARTMENT ON 31st DECEMBER, 1938.

W. H. Brodie ..	.. M.B., Ch. B., D.P.H.,	Health Officer,
		Deputy Registrar of Births and Deaths,
		Deputy Superintendent of Vaccination,
		Registrar of Midwives,
		Medical Superintendent of Infectious Diseases Hospital,
		Medical Superintendent of Chinese Small-pox Hospital.
E. W. Graham ..	.. M.B., Ch. B.,	
		Deputy Health Officer,
		Deputy Registrar of Births and Deaths,
		Deputy Superintendent of Vaccination.
T. P. Khoo ..	.. M.B., B.S. (Hong Kong),	
		Deputy Registrar of Deaths,
		Assistant Medical Officer.

SANITARY SECTION.

J. E. Miller ..	.. M.S.I.A., Cert. R.S.I.,	Chief Sanitary Inspector, joined the service 14th September, 1933.
R. J. Rangel ..	.. Sanitary Inspector,	do. 1st October, 1913.
Ow Leong Chye ..	.. do.	do. 1st July, 1921.
E. V. Lesslar ..	.. do.	do. 1st July, 1921.
John Loh ..	.. Sanitary Sub-Inspector,	do. 17th May, 1921.
Yeap Hin Tat ..	.. do.	do. 14th August, 1922.
Lim Khay Seng ..	.. do.	do. 1st March, 1923.
Lo Siew Tean ..	.. do.	do. 1st July, 1923.
Teoh Cheng Hoe ..	.. do.	do. 1st December, 1923.
M. S. d'Orville ..	.. do.	do. 18th February, 1924.
Oh Cheng Guan ..	.. do.	do. 18th May, 1926.
Liew Ah Foo ..	.. do.	do. 20th May, 1926.
Lim Teik Ghee ..	.. do.	do. 16th January, 1930.
Rejab bin Othman ..	.. do.	do. 6th February, 1930.
Oh Cheng Ian ..	.. do.	do. 1st November, 1930.

C. B. de Souza ..	Sanitary Sub-Inspector,	joined the service	12th June,	1933.
M. B. Pestana ..	do.	do.	1st July,	1934.
Lee Yin Koon ..	do.	do.	1st January,	1935.
Lim Mah Chan ..	do.	do.	1st August,	1935.
Teoh Cheng Kooi ..	do.	do.	1st May,	1936.
E. D. Joseph ..	Chief Clerk,	do.	6th October,	1920.
Ooi Leong Teik ..	2nd Clerk,	do.	1st January,	1921.
Lim Chin Aun ..	3rd Clerk,	do.	17th October,	1928.
Goh Swee Hock ..	4th Clerk,	do.	1st September,	1934.
Idris bin Haji Sahak ..	Milk Inspector,	do.	14th July,	1937.
N. Rethinam ..	Dresser,	do.	15th January,	1934.
Eusoff bin Abdul Gaffour ..	Assistant Dresser,	do.	25th August,	1930.

MATERNITY AND CHILD WELFARE SECTION.

Miss H. Flint ..	S.R.N., S.C.M., A.R.San.I.,	Health Sister, joined the service	1st May,	1928.
Miss F. M. Sloan ..	S.R.N., S.C.M.,	Health Sister,	do.	13th November, 1931
Miss G. M. Grieve ..	S.R.N., S.C.M.,	Health Sister,	do.	16th June, 1938.
Mrs. Lena Benjamin ..	Health Nurse,	do.	1st August,	1936.
Miss Lim Beh Kah ..	do.	do.	1st August,	1936.
Miss Nundha Bhuangboon ..	do.	do.	1st August,	1938.
Miss Soa Gek Ean ..	do.	do.	1st September,	1938.

Eight qualified midwives as part-time nurses.

CONSERVANCY SECTION, MARKETS AND BATHS AND STREET STALLS.

W. G. F. Colebeck ..	Cert. R.S.I., Certificated Food Inspector,	Town Superintendent, joined the service	27th August,	1936.
Yeap Choo Eng ..	Conservancy Inspector,	do.	18th August,	1921.
M. Maruthalingam ..	do.	do.	1st October,	1931.
S. M. Soosay ..	do.	do.	5th January,	1929.
Foo Joo Sun ..	Clerk,	do.	1st July,	1926.
K. S. Naidu ..	do.	do.	18th November,	1937
G. D. Cooper ..	Market Inspector,	do.	7th October,	1935.
Lim Cheng Hoe ..	Assistant Inspector of Street Stalls,	do.	1st May,	1936.

MUNICIPAL HEALTH OFFICE,

Penang, 19th July, 1939.

To

THE MUNICIPAL COMMISSIONERS.

Gentlemen,

I have the honour to submit the following report on the health of the Municipality during 1938.

I. POPULATION.

The estimated mid-year population was 171,988. This figure is arrived at by the Registrar General's method of estimation which is commonly adopted.

The estimated distribution of the population at the middle of 1938 among the various races was as follows:—

TABLE I.

Race	Males	Females	Total	Per cent of Total
European ..	810	541	1,351	1
Eurasian ..	1,047	1,227	2,274	1
Chinese ..	67,363	49,180	116,543	68
Malay ..	11,072	10,955	22,027	13
Indian ..	21,082	6,684	27,766	16
Others ..	1,136	891	2,027	1
Total ..	102,510	69,478	171,988	100

2. BIRTHS.

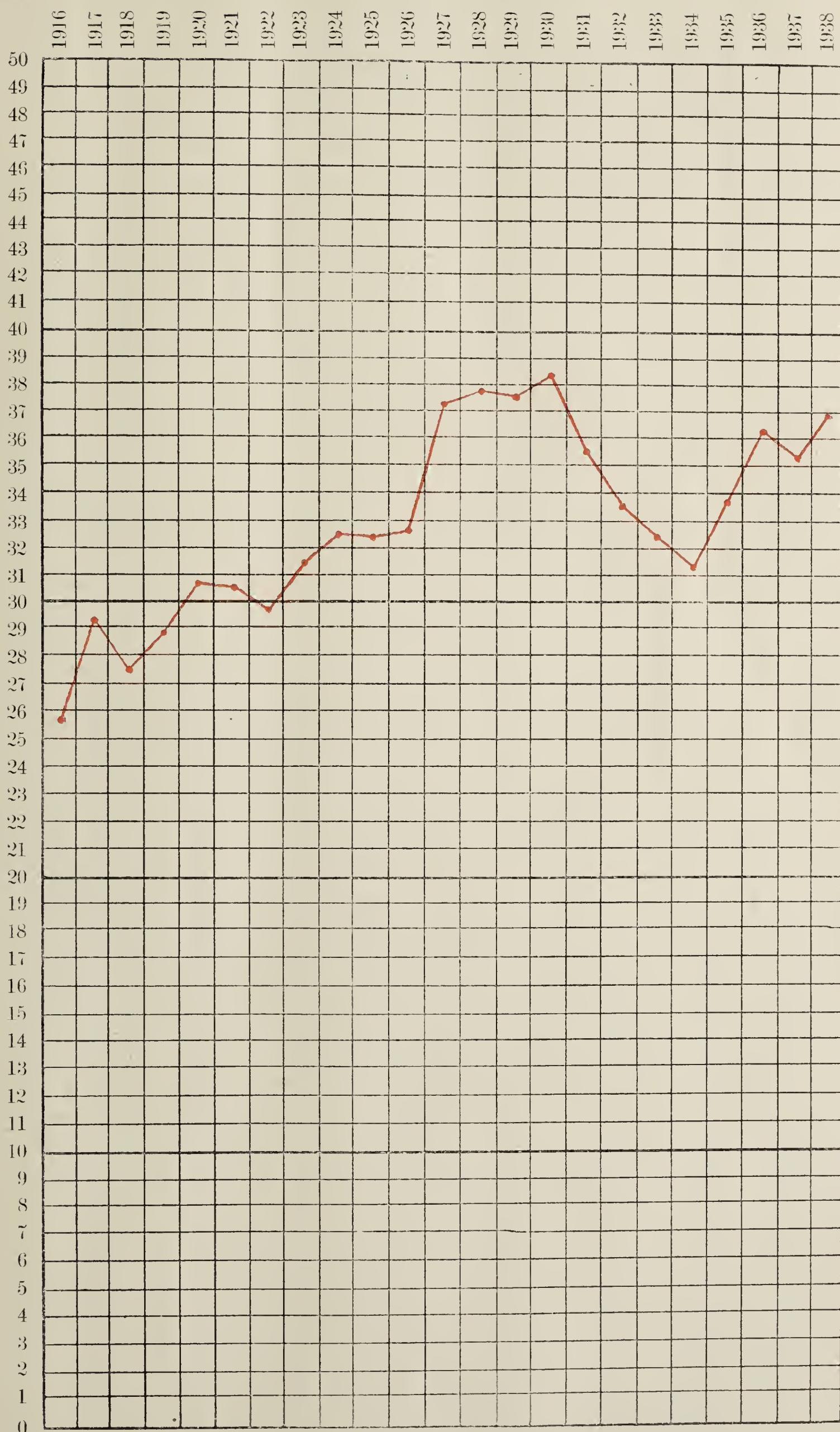
There were 6,341 births registered of which 3,246 were of males and 3,095 of females, the birth rate being 36.87 per thousand. The figures for 1937 were, births 5,939 and birth rate 35.21.

Reckoned on the estimated female population alone the birth rate was 91.27 per thousand compared with 87.16 per thousand in 1937.

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PENANG MUNICIPALITY.

BIRTH RATES.



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The number of births and birth rates for the various races were as follows:—

TABLE II.

Race.	Number of births.			Birth rate per thousand.	
	Males	Females	Total	Total population	Female population
European	28	24	52	38,49	96.12
Eurasian	14	17	31	13,63	25.26
Chinese	2,511	2,410	4,921	42,22	100.06
Malay	269	228	497	22,56	45.37
Indian	404	396	800	28,81	119.69
Others	20	20	40	19,73	44.89

A comparison with the births registered during the previous ten years is shown here.

TABLE III.

Year	European	Eurasian	Chinese	Malay	Indian	Others	Total
1928	58	52	3,928	595	661	38	5,332
1929	45	48	3,970	663	656	28	5,410
1930	61	56	4,084	674	730	25	5,630
1931	49	58	3,899	596	677	36	5,315
1932	50	63	3,739	568	679	30	5,129
1933	32	52	3,655	587	709	17	5,052
1934	39	39	3,656	508	709	26	4,977
1935	65	43	4,060	494	756	34	5,452
1936	54	45	4,546	517	772	41	5,975
1937	56	50	4,547	490	762	34	5,939
Average for ten years	51	51	4,008	569	711	31	5,421
1938	52	31	4,921	497	800	40	6,341

3. DEATHS.

The gross total of deaths within Municipal limits during the year was 3,535 and crude death rate 20.55; of this number 524 were not normally resident in Penang and had been less than three months within Municipal limits. Omitting these we have 3,011 deaths and a corrected death rate of 17.51 per thousand.

The following table shows the distribution of the deaths in age groups and races.

TABLE IV.

DEATHS	SEX	AGES.													GRAND TOTAL.	
		Under 1 month	2-3 mths	4-12 mths	1-5 yrs.	6-15 yrs.	16-25 yrs.	26-35 yrs.	36-45 yrs.	46-55 yrs.	56-65 yrs.	66-75 yrs.	Over 75 yrs.	Unknown.		
European ...	M	1	—	—	—	—	—	—	1	—	—	—	—	—	2	5
	F	2	—	—	—	—	—	—	1	—	—	—	—	—	3	
Eurasian ...	M	—	—	—	—	—	—	—	1	—	2	1	1	—	5	14
	F	—	—	—	—	1	1	2	1	1	—	1	2	—	9	
Chinese ...	M	75	92	101	119	43	83	125	183	209	182	85	19	1	1317	2207
	F	56	76	104	109	25	67	97	84	85	74	82	31	—	890	
Malay ...	M	10	16	18	13	4	12	14	14	17	21	10	10	—	159	332
	F	9	12	14	6	17	18	20	12	15	18	20	12	—	173	
Indian ...	M	29	6	17	15	5	25	59	51	26	27	9	2	—	271	430
	F	13	7	10	27	9	11	22	21	13	10	9	7	—	159	
Others ...	M	—	1	1	1	—	1	—	1	1	1	1	1	—	9	23
	F	—	—	—	1	1	—	3	1	3	2	3	—	—	14	
Total ...	M	115	115	137	148	52	121	198	250	254	233	106	33	1	1763	3011
	F	80	95	128	143	53	97	144	120	117	104	115	52	—	1248	
GRAND TOTAL ...		195	210	265	291	105	218	342	370	371	337	221	85	1	3011	

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Compared with 1937, the Chinese deaths have decreased by 117, the Indian deaths by 15 and the Malay deaths by 54.

The total deaths of each race in the last ten years are shown here.

TABLE V.

Year	European	Eurasian	Chinese	Malay	Indian	Others
1929	7	27	2,388	465	560	33
1930	14	23	2,245	409	549	19
1931	10	26	2,244	451	489	21
1932	6	28	2,186	474	490	16
1933	6	27	2,202	485	430	22
1934	2	26	2,385	564	485	30
1935	5	34	2,267	414	469	17
1936	6	25	2,224	472	462	26
1937	6	26	2,324	386	445	21
1938	5	14	2,207	332	430	23

A comparison of the births and deaths of the different races may be of interest.

TABLE VI.

Race	Births	Birth Rate per thousand	Deaths	Death Rate per thousand
European	52	38.49	5	3.70
Eurasian	31	13.63	14	6.16
Chinese	4,921	42.22	2,207	18.95
Malay	497	22.56	332	15.07
Indian	800	28.81	430	15.49
Others	40	19.73	23	11.35

There were 251 still-births reported during the year.

4. INFANT MORTALITY.

Table VII shows according to race the infant mortality, that is, deaths of children under one year of age per 1,000 births occurring during the same period, and a comparison with 1937.

TABLE VII.

RACE.	Births	Deaths under one year.	Infant deaths per thousand births.	
			1938	1938 1937
European	..	52	3	58
Eurasian	..	31	—	—
Chinese	..	4,921	504	102
Malay	..	497	79	159
Indian	..	800	82	103
Others	..	40	2	50
Total	..	6,341	670	106
				129

The chief causes of infant deaths and the mortality compared with those in previous years from the same causes are given in Table VIII.

TABLE VIII.

Chief causes of infant deaths	Infant deaths per thousand births.										
	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	
Intestinal diseases	..	18	23	17	20	18	20	25	25	22	12
Respiratory diseases	..	31	26	28	27	27	42	38	24	32	30
Prematurity and Debility	..	25	21	19	19	20	27	27	24	21	18
Convulsions	..	57	50	45	44	48	34	32	27	22	20

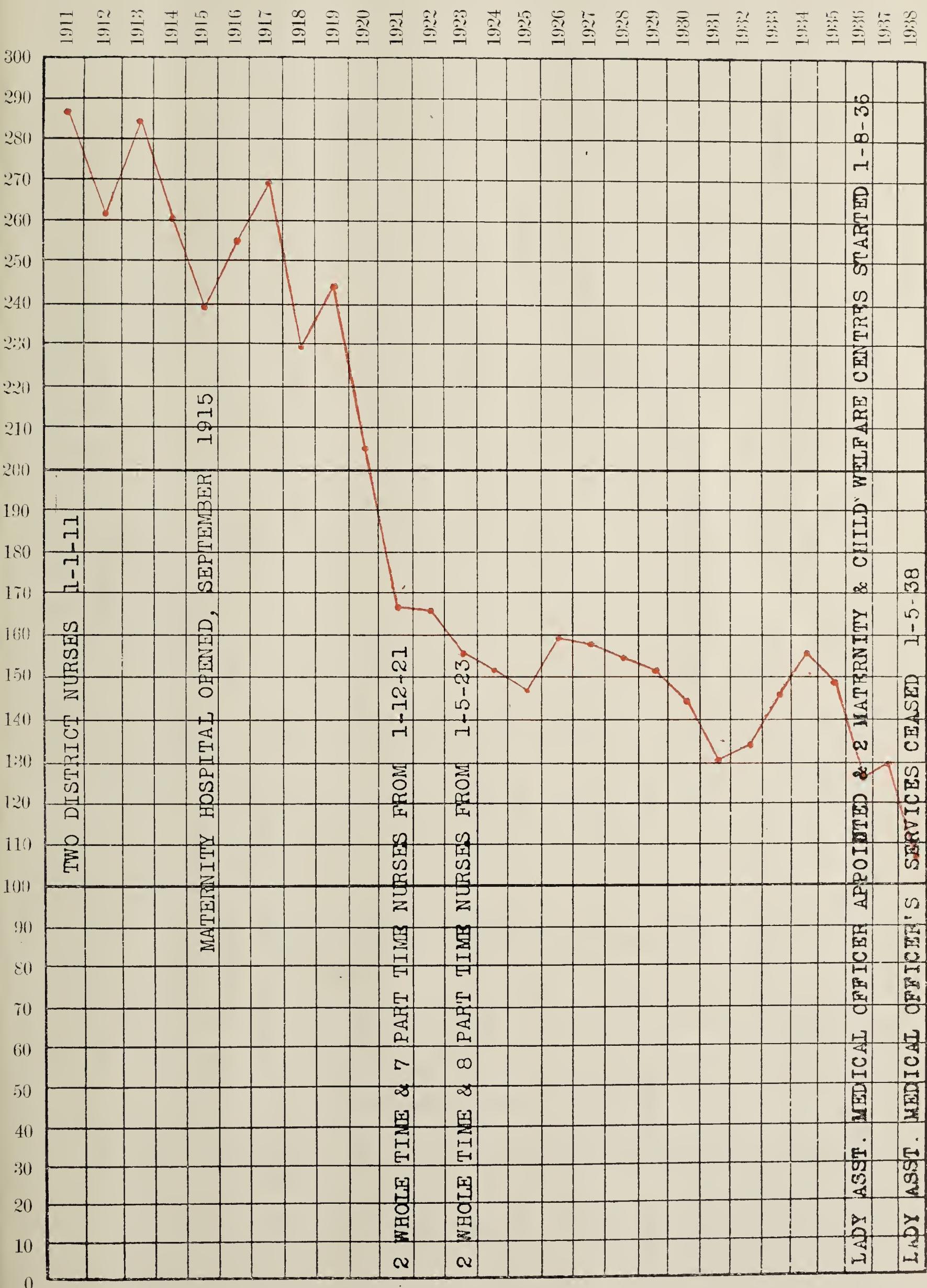
These causes accounted for 507 of the 670 infant deaths which occurred.

126 infants were certified as having died from convulsions; the corresponding figure for 1937 was 133.

Table VIII is unreliable, the only figures that may be used with any exactitude for comparison are those shown in Table VII, and in the Infant Mortality chart.

PENANG MUNICIPALITY.

INFANT MORTALITY.



NOTE:—Registration of births is believed to have been more accurate from September, 1920.

Table IX is given below to show a comparison between births, infant mortality and general death rate for the preceding ten years and for 1938.

TABLE IX.

Year	Estimated population		Births		Deaths under 1 year		Deaths at all ages		Corrected Rate
	Total	Rate per thousand population	Total	Rate per thousand births	Crude Total	Corrected Total	Crude Rate		
1928	141,348	5,332	37,72	826	155	4,670	3,668	33.04	25.95
1929	144,114	5,410	37,54	815	151	4,126	3,480	28.63	24.15
1930	146,935	5,630	38,32	809	144	3,939	3,259	26.81	22.18
1931*	149,964	5,315	35,44	690	130	3,710	3,241	24.74	21.61
1932	152,908	5,129	33,54	688	134	3,569	3,200	23.34	20.93
1933	156,014	5,052	32,38	737	146	3,592	3,172	23.02	20.33
1934	159,085	4,977	31,28	777	156	3,935	3,492	24.73	21.95
1935	162,217	5,452	33,61	807	148	3,709	3,206	22.86	19.76
1936	165,411	5,975	36,12	755	126	3,659	3,215	22.12	19.44
1937	168,667	5,939	35,21	768	129	3,697	3,208	21.92	19.02
Average for the preceding ten years	154,666	5,421	35,05	767	141	3,861	3,314	24.96	21.43
1938	171,988	6,341	36,87	670	106	3,535	3,011	20.55	17.51

* Census year.

5. CAUSE OF DEATH.

In Table X the total number of deaths viz., 3,011 was certified as follows:—

Hospitals	..	919
Private Practitioners	..	786
Coroner	..	81
Deputy Registrar of Deaths	..	1,225 i.e. 40.68% of total.

TABLE X.

DEATHS.	SEX	AGES													Total.	Grand Total.	
		Under 1 mth.	2-3 mths.	4-12 mths.	1-5 yrs.	6-15 yrs.	16-25 yrs.	26-35 yrs.	36-45 yrs.	46-55 yrs.	56-65 yrs.	66-75 yrs.	Over 75 yrs.	Un-known.			
Enteric fever ...	M.	—	—	—	1	3	9	7	5	1	—	—	—	—	—	26	39
	F.	—	—	—	—	5	5	2	1	—	—	—	—	—	—	13	
Diarrhoea ...	M.	2	7	10	7	—	1	1	2	3	2	—	—	—	—	35	73
	F.	2	4	13	11	1	—	2	—	1	—	3	1	—	—	38	
Dysentery ...	M.	—	—	1	3	—	1	—	2	4	1	1	—	—	—	13	28
	F.	—	—	—	2	2	—	5	2	2	2	—	—	—	—	15	
Cerebro-Spinal Meningitis ...	M.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	F.	—	—	—	—	—	—	1	—	—	—	—	—	—	—	1	
Whooping Cough ...	M.	—	—	1	1	—	—	—	—	—	—	—	—	—	—	2	2
	F.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Unspecified fever ...	M.	3	18	27	36	11	27	23	33	25	24	1	—	—	—	228	446
	F.	4	15	31	34	25	27	23	24	19	10	3	3	—	—	218	
Syphilis ...	M.	—	—	—	—	—	1	5	4	2	1	—	—	—	—	13	16
	F.	—	1	—	—	—	—	—	1	1	—	—	—	—	—	3	
Puerperal fever ...	F.	—	—	—	—	—	7	2	—	—	—	—	—	—	—	9	9
Other septic diseases ...	M.	3	1	1	2	4	10	2	8	6	6	3	1	—	—	47	78
	F.	—	2	2	2	4	4	4	4	2	4	3	—	—	—	31	
Pulmonary Tuberculosis ...	M.	—	1	2	1	2	25	62	65	54	20	4	1	—	—	237	305
	F.	—	—	—	1	2	18	19	16	7	4	1	—	—	—	68	
Other tubercular diseases ...	M.	—	—	2	5	2	2	5	—	1	—	—	—	—	—	17	25
	F.	—	—	3	2	—	1	1	1	—	—	—	—	—	—	8	
Leprosy ...	M.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	F.	—	—	—	—	—	—	1	—	—	—	—	—	—	—	1	
Tetanus ...	M.	3	—	—	1	—	—	—	—	1	1	—	—	—	—	6	13
	F.	4	—	—	1	—	1	1	—	—	—	—	—	—	—	7	
Diphtheria ...	M.	—	—	2	6	2	—	—	—	—	—	—	—	—	—	10	18
	F.	—	—	1	6	1	—	—	—	—	—	—	—	—	—	8	
Influenza ...	M.	—	1	2	1	1	—	—	—	—	1	—	—	—	—	6	9
	F.	—	2	—	—	—	—	—	—	—	—	1	—	—	—	3	
Measles ...	M.	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1	1
	F.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Carried forward ...	M.	11	28	49	64	25	76	105	119	97	56	9	2	—	641	1064	
	F.	10	24	50	59	40	63	61	49	32	20	11	4	—	423		

DEATHS.	SEX	Under 1 mth.	AGES										Total.	Grand Total.		
			2-3 mths.	4-12 mths.	1-5 yrs.	6-15 yrs.	16-25 yrs.	26-35 yrs.	36-45 yrs.	46-55 yrs.	56-65 yrs.	66-75 yrs.	Over 75 yrs.			
Brought forward ...	M.	11	28	49	64	25	76	105	119	97	56	9	2	641	1064	
	F.	10	24	50	59	40	63	61	49	32	20	11	4	423		
Malaria	M.	—	—	—	1	1	7	6	4	3	1	—	—	23	31	
	F.	—	—	—	4	—	1	2	—	—	1	—	—	8		
Malarial cachexia	M.	—	—	—	—	—	—	—	1	—	—	—	—	—	1	1
	F.	—	—	—	—	—	—	—	—	—	—	—	—	—		
Worms	M.	—	—	—	3	—	—	—	1	—	1	—	—	—	5	7
	F.	—	—	—	1	—	—	1	—	—	—	—	—	—	2	
Rheumatism	M.	—	—	—	—	—	—	—	1	1	1	—	—	—	3	5
	F.	—	—	—	—	—	—	—	—	1	—	1	—	—	2	
Cancer	M.	—	—	—	—	—	—	5	4	9	10	6	1	—	35	63
	F.	—	—	—	—	—	—	1	6	6	7	6	2	—	28	
Anaemia	M.	—	—	—	—	—	—	—	2	—	—	1	—	—	3	11
	F.	—	1	—	1	—	2	1	1	—	1	1	—	—	8	
Beri-beri	M.	—	1	2	—	1	2	5	3	3	1	—	—	1	19	34
	F.	—	1	1	3	—	—	5	3	2	—	—	—	—	15	
Parturition	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	1	1
	F.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Premature birth	M.	48	—	—	1	—	—	—	—	—	—	—	—	—	49	89
	F.	40	—	—	—	—	—	—	—	—	—	—	—	—	40	
Old age	M.	—	—	—	—	—	—	—	—	—	54	49	21	—	124	242
	F.	—	—	—	—	—	—	—	2	21	61	34	—	—	118	
Convulsions	M.	12	31	27	12	—	—	—	—	—	—	—	—	—	82	154
	F.	5	25	26	16	—	—	—	—	—	—	—	—	—	72	
Other diseases of Nervous system	M.	1	—	—	2	—	1	5	4	4	5	1	—	—	23	45
	F.	—	1	1	1	1	1	10	4	2	1	—	—	—	22	
Organs of special sense ...	M.	1	1	1	—	—	—	—	—	—	—	—	—	—	3	4
	F.	—	1	—	—	—	—	—	—	—	—	—	—	—	1	
Circulatory system	M.	6	1	1	—	1	2	11	35	33	35	19	4	—	148	248
	F.	1	—	1	—	2	6	10	14	26	20	12	8	—	100	
Carried forward ...	M.	80	62	80	83	28	88	137	172	152	164	85	28	1	1160	1999
	F.	56	53	79	85	43	73	91	77	71	71	92	48	—	839	

DEATHS.	SEX	AGES													Total.	Grand Total.
		Under 1 mth.	2-3 mths.	4-12 mths.	1-5 yrs.	6-15 yrs.	16-25 yrs.	26-35 yrs.	36-45 yrs.	46-55 yrs.	56-65 yrs.	66-75 yrs.	Over 75 yrs.	Un-known.		
Brought forward ...	M.	80	62	80	83	28	88	137	172	152	164	85	28	1	1160	1999
	F.	56	53	79	85	43	73	91	77	71	71	92	48	—	839	
Bronchitis ...	M.	3	17	11	9	3	2	7	17	31	13	2	1	—	116	184
	F.	2	9	13	5	—	—	6	8	13	5	6	1	—	68	
Pneumonia ...	M.	—	2	3	11	6	7	11	12	14	12	4	1	—	83	125
	F.	1	—	7	3	1	6	7	6	2	3	4	2	—	42	
Other diseases of respiratory system ...	M.	15	26	33	32	3	4	7	8	8	10	2	—	—	148	240
	F.	10	16	21	33	2	2	1	—	2	4	1	—	—	92	
Enteritis ...	M.	4	3	6	8	1	—	—	—	2	1	—	—	—	25	59
	F.	3	10	5	11	2	—	1	—	—	—	2	—	—	34	
Diseases of liver ...	M.	2	—	—	—	—	—	1	2	7	3	3	—	—	18	24
	F.	—	1	—	—	—	—	2	—	2	1	—	—	—	6	
Other diseases of digestive system ...	M.	3	—	1	2	3	6	14	15	10	7	3	—	—	64	90
	F.	2	2	—	1	—	2	6	6	3	1	2	1	—	26	
Lymphatic system ...	M.	—	—	1	—	—	—	—	—	—	—	—	—	—	1	1
	F.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Glandlike organs of uncertain use ...	M.	—	—	—	—	1	—	—	—	—	—	—	—	—	1	2
	F.	—	—	—	—	—	—	1	—	—	—	—	—	—	1	
Urinary System ...	M.	—	1	—	1	2	9	8	17	21	18	7	3	—	87	171
	F.	—	—	1	4	3	6	16	11	21	15	7	—	—	84	
Generative organs ...	M.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9
	F.	—	—	—	—	—	—	2	7	—	—	—	—	—	—	
Child birth and abortion ...	F.	—	—	—	—	—	5	9	4	1	—	—	—	—	19	19
	M.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Bones and Joints ...	M.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	F.	—	—	—	—	—	1	—	—	—	—	—	—	—	1	
Accident and Negligence ...	M.	—	—	—	1	5	2	7	3	2	—	—	—	—	20	23
	F.	—	—	—	—	2	1	—	—	—	—	—	—	—	3	
Homicide, Suicide and Execution ...	M.	—	—	—	—	—	2	5	3	4	1	—	—	—	15	20
	F.	—	—	—	—	—	1	1	1	2	—	—	—	—	5	
Debility ...	M.	8	4	2	1	—	1	—	—	1	1	—	—	—	18	32
	F.	6	4	2	1	—	—	1	—	—	—	—	—	—	14	
Diabetes ...	M.	—	—	—	—	—	—	—	1	2	3	—	—	—	6	11
	F.	—	—	—	—	—	—	—	—	—	4	1	—	—	5	
Sunstroke ...	M.	—	—	—	—	—	—	1	—	—	—	—	—	—	1	1
	F.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Total ...	M.	115	115	137	148	52	121	198	250	254	233	106	33	1	1763	3011
	F.	80	95	128	143	53	97	144	120	117	104	115	52	—	1248	

A comparison between the number of deaths attributed to some of the principal causes in 1938 and in the preceding ten years is shown here.

TABLE XI.

Disease	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	Average for pre- ceding ten years	1938
Pulmonary Tuberculosis	432	485	374	420	324	232	276	251	304	293	339	305
Pneumonia	312	300	249	231	120	116	155	159	147	166	196	125
Bronchitis	190	133	122	106	155	190	175	154	178	137	154	184
Other Respiratory Diseases	168	190	145	226	224	227	400	297	253	274	240	240
Circulatory System	188	204	190	196	224	256	317	266	284	265	238	248
Enteric Fever	23	14	15	25	37	21	16	24	23	24	22	39
Enteritis	35	44	62	68	72	51	69	89	123	81	69	59
Dysentery	94	42	49	58	32	27	36	35	23	30	43	28
Diarrhoea	154	157	158	116	110	108	93	109	110	102	122	73
Other Diseases of Digestive System	49	52	62	51	64	48	59	80	83	91	64	90
Urinary System	103	111	98	105	145	162	214	140	171	180	143	171
Malaria	168	103	89	72	57	51	25	37	32	28	66	31
Unspecified Fever	413	435	400	427	507	523	507	443	406	458	452	446
Syphilis	43	30	53	48	53	46	48	33	22	21	40	16
Convulsions	424	380	360	316	303	320	213	216	199	179	291	154
Other Septic Diseases	77	69	85	80	72	79	69	76	56	85	75	78
Beri-beri	11	30	14	30	50	92	114	57	63	56	52	34
Debility	79	56	69	51	50	52	56	67	46	35	56	32
Premature Birth	85	82	62	64	67	61	89	91	102	100	80	89
Old Age	290	242	255	236	237	221	254	249	226	258	247	242

The distribution of the chief causes of death among the various races is shown in Table XII.

TABLE XII.

Cause of death.	European	Eurasian	Chinese	Malay	Indian	Others	Total
Pulmonary Tuberculosis	1	—	244	19	39	2	305
Pneumonia	1	1	89	4	31	—	125
Bronchitis	—	—	152	12	20	—	184
Other Respiratory Diseases	—	—	196	11	32	1	240
Circulatory System	—	5	197	13	27	6	248
Enteric Fever	—	—	29	4	5	1	39
Enteritis	—	2	48	4	4	1	59
Dysentery	—	—	22	1	5	—	28
Diarrhoea	—	—	56	2	15	—	73
Other Diseases of Digestive System	—	—	64	4	21	1	90
Urinary System	—	—	127	21	23	—	171
Malaria	—	—	21	—	10	—	31
Unspecified Fever	—	2	282	96	62	4	446
Syphilis	—	—	11	2	3	—	16
Convulsions	—	—	99	43	11	1	154
Other Septic Diseases	—	—	54	9	15	—	78
Beri-beri	—	—	32	2	—	—	34
Debility	—	—	18	6	8	—	32
Premature Birth	3	—	59	4	23	—	89
Old Age	—	1	146	61	29	5	242

Details are appended of the sources of certification of the principal causes of death.

TABLE XIII.

Cause of death	Number certified by			
	Hospitals	Private Practitioners	Deputy Registrar of Deaths	Coroner
Pulmonary Tuberculosis	183	72	49	1
Pneumonia	53	68	1	3
Bronchitis	3	27	154	—
Other Respiratory Diseases	114	80	39	7
Circulatory System	63	99	77	9
Enteric Fever	23	15	—	1
Enteritis	22	28	9	—
Dysentery	15	10	3	—
Diarrhoea	15	10	48	—
Other Diseases of Digestive System	51	29	9	1
Urinary System	44	61	65	1
Malaria	24	5	—	2
Unspecified Fever	10	91	345	—
Syphilis	10	1	1	4
Convulsions	7	33	114	—
Other Septic Diseases	39	17	21	1
Beri-beri	19	7	1	7
Debility	12	6	14	—
Premature Birth	46	16	27	—
Old Age	20	22	200	—

6. SEASONAL MORTALITY.

The deaths and death rate for each month are here recorded.

TABLE XIV.

Month.	Deaths.	Death rate per thousand	Month	Deaths.	Death rate per thousand
January	288	19.72	July	235	16.09
February	236	17.89	August	221	15.13
March	252	17.25	September	227	16.06
April	233	16.48	October	267	18.28
May	280	19.17	November	264	18.68
June	262	18.53	December	246	16.84

7. INFECTIOUS DISEASES.

Table XV shows the incidence among the various races of the principal infectious diseases which occurred during the year.

TABLE XV.

Race	Sex	Chicken-pox	Enteric Fever	Tuberculosis	Influenza	Puerperal Fever	Diphtheria	Measles	Mumps	Cerebro-Spinal Meningitis	Whooping Cough	Total
European	M	—	—	—	—	—	—	2	—	—	—	2
	F	1	2	1	—	—	—	3	—	—	—	6
Eurasian	M	5	2	—	—	—	1	1	—	—	—	9
	F	4	1	—	—	—	—	—	—	—	—	5
Chinese	M	23	30	211	4	—	14	4	—	—	2	288
	F	6	19	56	3	7	21	—	—	1	—	113
Malay	M	7	5	10	1	—	—	2	—	—	—	25
	F	2	4	9	—	9	—	—	—	—	—	24
Indian	M	114	18	32	—	—	3	51	—	—	—	218
	F	15	10	9	—	2	1	—	—	—	—	37
Others	M	—	1	1	1	—	—	—	—	—	—	3
	F	—	1	1	—	1	—	—	—	—	—	3
Total	M	149	56	254	6	—	15	12	51	—	2	545
	F	27	37	76	3	19	22	3	—	1	—	188
Grand Total		176	93	330	9	19	37	15	51	1	2	733

Table XVI shows the main figures for the last 30 years relating to births, deaths, and infant mortality.

TABLE XVI.

Year	Total number of		Birth rate	Crude death rate	Infant Mortality
	Births	Deaths (crude)			
1909	1656	3923	16.15	38.25	337 (a)
1910	1905	3912	18.39	37.76	290
*1911	2133	4045	21.02	39.88	287 (b)
1912	2421	3829	23.69	37.47	261
1913	2464	3794	23.95	36.86	284
1914	2545	3774	24.55	36.40	260
1915	2808	3390	26.89	32.46	239 (c)
1916	2708	3341	25.74	31.76	255
1917	3099	4071	29.25	38.42	269
1918	2949	4909	27.55	45.99	229
1919	3203	4466	28.86	41.54	244
1920	3321	4090	30.67	37.75	205
*1921	3768	3775	30.56	30.61	167 (d)
1922	3738	3768	29.71	29.94	166
1923	4028	3801	31.39	29.62	155 (e)
1924	4257	3811	32.54	29.13	151
1925	4318	3858	32.38	28.93	147
1926	4434	4396	32.60	32.32	159
1927	5151	4860	37.15	35.05	158
1928	5332	4670	37.72	33.04	155
1929	5410	4126	37.54	28.63	151
1930	5630	3939	38.32	26.81	144
*1931	5315	3710	35.44	24.74	130
1932	5129	3569	33.54	23.34	134
1933	5052	3592	32.38	23.02	146
1934	4977	3935	31.28	24.73	156
1935	5452	3709	33.61	22.86	148
1936	5975	3659	36.12	22.12	126 (f)
1937	5939	3697	35.21	21.92	129
1938	6341	3535	36.87	20.55	106 (g)

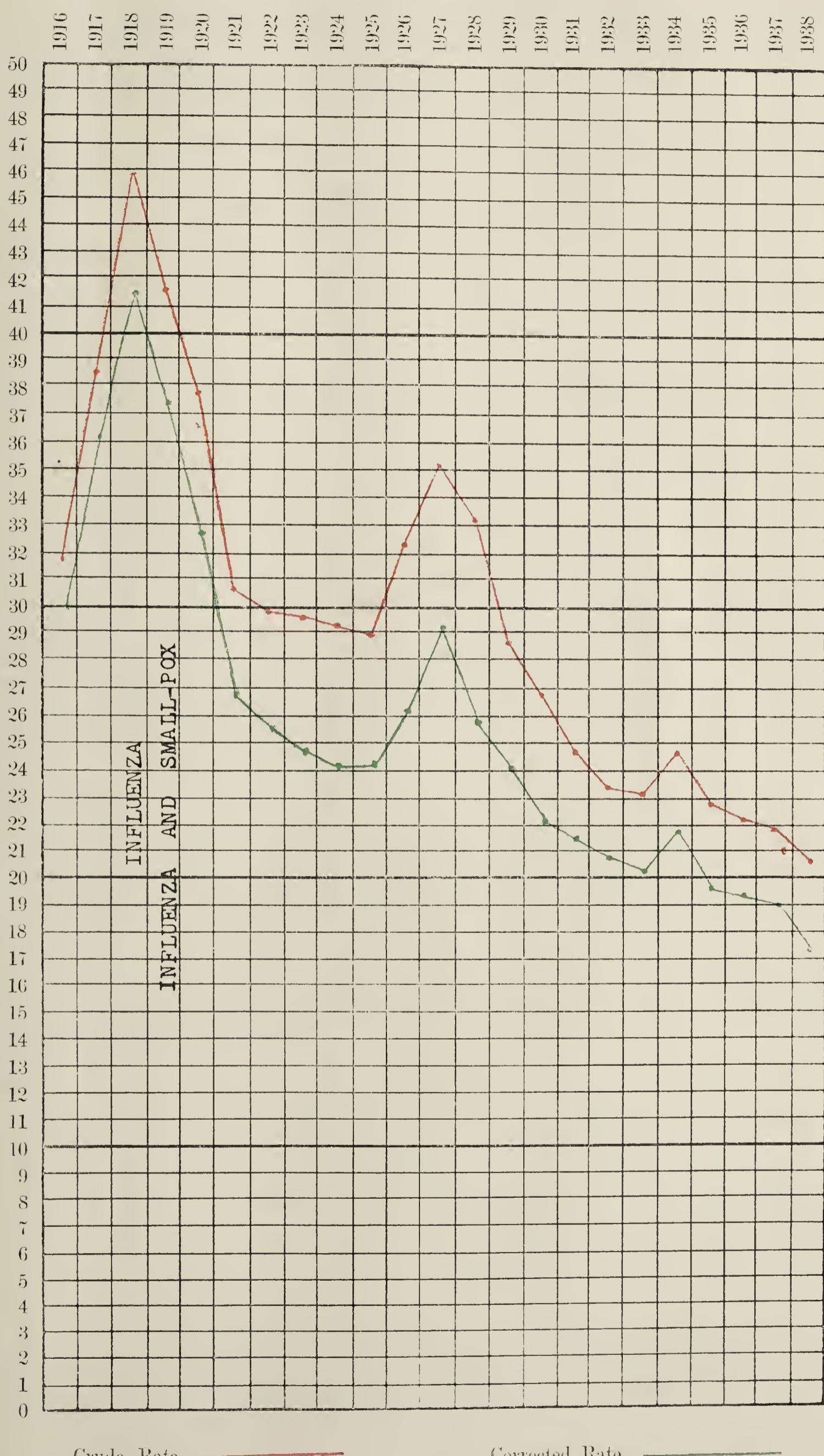
*Census year

Note :—

- (a) 1st January, 1909—one District Nurse
- (b) 1st January, 1911—two District Nurses.
- (c) September, 1915—Maternity Hospital opened.
- (d) 1st December, 1921—two whole-time and seven part-time District Nurses.
- (e) 1st May, 1923—two whole-time and eight part-time District Nurses.
- (f) 1st August, 1936—Lady Assistant Medical Officer appointed and two Maternity and Child Welfare Centres started.
- (g) 1st May, 1938—Lady Assistant Medical Officer's services ceased.

PENANG MUNICIPALITY.

DEATH RATES.



8. REGISTRATION OF BIRTHS AND DEATHS.

As a result of the re-organisation of the registration of births and deaths which came into force as from 1st July, notification of births has to be made at the Municipal Offices with the exception of those born at the Maternity Hospital while deaths may still be notified at any Police Station, General Hospital or at the Municipal Offices.

Births are notifiable within 14 days and notification of deaths is required within 24 hours.

9. MATERNITY AND CHILD WELFARE.

Welfare Centres.

Throughout the year work continued at the two Centres, Kimberley Street and Coolie Lines Road.

As in 1937, Clinics were held at the Kimberley Street Centre on Mondays, Wednesdays, Fridays and on Saturday mornings; and on Tuesdays and Thursdays at Coolie Lines Road.

	First Attendances	Re-attendances
Kimberley Street Centre	.. 1,133	4,955
Coolie Lines Road Centre	.. 503	2,099

After the first quarter of the year the services of the Lady Assistant Medical Officer in attendance at the two Welfare Centres were dispensed with as it was felt that too much work was being done there, which ought to be left to the General Practitioners and the Government Clinics and not done by a Public Health Department. However the Centres were kept open for instructional purposes with two nurses in regular attendance, occasional visits being paid by the Health Sisters and the Medical Officers. The attendances fully justified the keeping open of the Centres and it is hoped that as the scheme becomes more fully developed more organised instruction may be given.

District Work.

The district work, as formerly, was carried out by two Health Sisters each being assisted by four qualified midwives who acted as visitors to the homes, helping the mothers to attend properly to any minor ailments found, and trying to instruct them all in better mothercraft especially as regards the feeding of the family. The total number of visits made was 63,706.

With the money available it was wisely decided to extend the home visiting part of the work and to aim at a scheme which next year would bring the whole of the Municipal area within the scope of home visits.

Midwives.

At the end of the year the midwives registered under the Midwives Ordinance (Chapter 67) were:—

Class	1938	1937
A ..	.. 98	90
B ..	.. 310	295
C ..	.. 10	10

The Health Sisters have to supervise the work of the midwives practising in their districts, not at all an easy job in the face of so much prejudice to ordinary cleanliness. However the present day midwife's basket, although not always kept as it ought to be, is a distinct improvement on the museum specimens of a few years ago.

Infant Mortality.

129 babies died under the age of 7 days, and 30 between the ages of 7 and 14 days. Of the 670 infants who died under the age of 1 year, 195 were less than one month old, and 210 were between one month and three months old. The infantile mortality rate was 106 as compared with 129 in 1937.

The low record Infant Mortality Rate of 106 is no doubt partly due to the Maternity and Child Welfare work. Some fanatics might ascribe it to that work entirely, but that I think would be unwise. Such unbalanced opinions tend to minimise the importance of the general sanitary work which, because we have got used to it, we hardly notice; but this really plays a greater part in any such record than is ever ascribed to it.

Death notifications.

		3 months and under	4 months to 12 months
Deputy Registrar of Deaths	..	167	125
General Hospital and Maternity Hospital	..	140	59
General Practitioners	..	93	79
Coroner	..	5	2

Racial and age group distribution of deaths.

		3 months and under	4 months to 12 months
European	{ Males	..	1
	{ Females	..	—
Chinese	{ Males	..	167
	{ Females	..	132
Malay	{ Males	..	26
	{ Females	..	21
Indian	{ Males	..	35
	{ Females	..	20
Others	{ Males	..	1
	{ Females	..	—
Total	{ Males	..	230
	{ Females	..	175
Grand Total		<u>405</u>	<u>265</u>

10. VACCINATION.

As formerly, the majority of the vaccinations in the Municipal area was done by house to house visitation by two sanitary sub-inspectors who were employed as whole time vaccinators. Last year at the request of a charitable clinic, one of these sub-inspectors attended at the clinic once a week and the resulting number of vaccinations done there under better conditions than could be expected in the homes, has been very encouraging.

6,341 births were reported during the year, an increase of 402 over 1937.

Our staff did 4,950 vaccinations of which 4,810 were primary and 140 secondary. In addition, Government vaccinators during the year performed 2,719 secondary vaccinations, mostly in schools, while 464 primary vaccinations were done by private practitioners. No serious results were reported.

II. ANTI-MOSQUITO WORKS.

Specimens of mosquito larvae were brought to the office for identification purposes as previously and there was little or no change in the various types found in the Municipal area.

The work of the anti-mosquito gangs is having its effect on the outlook of the house holders regarding the prevalence of mosquitoes as they are becoming more and more surprised when they find mosquitoes causing annoyance. This is as it ought to for with their co-operation there is no reason why mosquitoes should be allowed to breed in the town area. We are always pleased to give expert assistance when notified of an unpleasant increase in mosquitoes even though the investigation invariably results in a breeding place being found in the complainant's premises. The drastic action of a Mosquito Order is never resorted to unless repeated negligence is found. It is encouraging and pleasing to hear people boast of not having used their mosquito nets for so many years. The boast a few years ago was for so many months!

Deaths from Malaria.

All notifications of deaths from Malaria are investigated with the object of tracing the possible source of infection. This year as formerly a large proportion of the 32 deaths notified could be definitely traced to infection outside the Municipal area. The following are the findings:—

Unknown.....	7
Province Wellesley.....	6
Kedah.....	5
Itinerant.....	5
Penang (Rural).....	2
Sumatra.....	1
Selangor.....	1
Perak.....	1
Perlis.....	1
Penang (Municipality).....	1

The total deaths were 6 more than in 1937. The one case within the town area was a purely clinical diagnosis of which I have the gravest doubt.

The "unknown" cases were all hospital patients and no trace of them could be got at the addresses given to the hospital, it is more than likely therefore that they came from outlying districts.

The small amount of Malaria in the Municipal area is largely due to the vigilance of the Hill Oiling Gang as it is always possible to find *A. Maculatus* breeding in the hill seepages and streams beyond the oiling zone.

The total oil consumption for the year was 84,800 gallons of Anti-Malarial Mixture, the cost being \$14,575.00, an increase of 4,160 gallons and \$1,345.00 respectively over 1937.

12. TUBERCULOSIS.

There was an increase of 12 deaths notified as due to Pulmonary Tuberculosis as compared to 1937. The total of 305 was still the highest cause of mortality exclusive of the 446 which came under the heading of "Unspecified Fever."

There can be little doubt that this state of affairs is due to poor housing. The Chief Sanitary Inspector in his report gives details of night inspections of Common Lodging Houses which are in reality houses let in lodging and not at all what is generally understood as Common Lodging Houses. We do not claim to license all the houses which according to the legal definition could be claimed to be Common Lodging Houses, our attempt at licensing starting only when there are more than ten inhabitants. Very few houses in the congested parts of the town are occupied by single families as it is quite impossible for single families to pay the rents.

Although we have started on several housing improvement schemes progress was greatly hindered by legal difficulties. However much good these schemes may do in getting rid of truly appalling houses, the type of buildings which will take their place will not provide for the crying need of small houses at low rentals. With land values as they are, property owners can hardly be expected to provide this need and I cannot see how the housing problem is to be improved unless by some type of subsidized scheme. Until something of this nature is forthcoming it is unlikely that we shall see any great reduction in the mortality of such diseases as Tuberculosis.

13. TYPHOID.

In Table XV the racial distribution can be seen. There were 93 cases as against 88 in 1937, of which only 75 were notified before death.

70 cases were treated in hospital; 24 died and 46 recovered.

23 cases remained at home; 15 died and 8 recovered.

The total number of deaths was 39 and it will be seen in Table X that the mortality rate was greatest between the ages of 6 and 35, 6 deaths occurring between 36 and 45 years.

39 deaths attributed to the enteric group was the highest recorded and an increase of 15 compared with 1937.

All cases were investigated and although it was rarely possible to trace a definite source of infection the common factor in all was the food hawker. Yet in spite of many attempts to get some control over the food hawker no action has been taken and it would seem useless to labour the point further on this occasion. It is hoped however that new laws relating to the sale of food will be in force fairly soon. These will give us power to deal more effectively with the existing conditions of the bulk of our food supplies which have to be seen to be believed.

14. CHICKEN-POX.

176 cases were reported, 154 of which were admitted to the Quarantine Camp.

Of the total, 9 were Eurasians, 29 Chinese, 9 Malays and 129 Indians.

38 cases were under ten years of age and 138 were over that age, their ages ranging from 2 months to 50 years.

As usual the Indians showed a distinct susceptibility to this disease, the number affected being quite out of proportion to the size of the community.

15. PUERPERAL FEVER.

19 cases were reported as against 26 in 1937: of the 19 cases 14 were notified before death.

7 were Chinese, 9 Malays, 2 Indians and 1 Phillipino: 9 died and 10 recovered.

16. INFLUENZA.

Under the Quarantine and Prevention of Disease Ordinance (Chapter 186) this is classified as a dangerous infectious disease.

There were 9 deaths but none of them was notified. 7 were Chinese, 1 Malay and 1 Japanese.

There was one case in each of the months of January, June, August, October and December, and 2 cases in both July and November.

7 cases were certified by general practitioners and 2 cases by Hospitals.

17. MEASLES.

This infectious disease is not notifiable under the Quarantine and Prevention of Disease Ordinance (Chapter 186).

There were 15 cases reported one of which died. 5 were Europeans, 1 Eurasian, 4 Chinese, 2 Malays and 3 Indians. 8 cases were treated at the Quarantine Camp: all recovered. 2 cases were treated in Hospital and recovered. 5 cases were treated at home.

18. MUMPS.

51 cases were reported, all were Indians. 50 cases were treated at the Quarantine Camp and 1 case was treated at home: all recovered.

19. CEREBRO-SPINAL MENINGITIS.

1 case, a Chinese, aged 32 years was notified in July. He was treated in Hospital and died.

20. DIPHTHERIA.

There were 37 cases of which only 23 were notified before death. Of the total one was an Eurasian, 35 were Chinese and 1 was an Indian.

Year		Notifications	Deaths
1938	..	23	18
1937	..	29	10

Of the 18 fatal cases only 2 were notified before death, 1 case was notified two days after death and the remaining 15, of which 13 were hospital cases, were not notified. Delay in seeking medical attention was still evident. This is very regrettable as the importance of early treatment should be common knowledge nowadays.

I have to thank the Government Bacteriologist for his co-operation in the examination of swabs.

21. WHOOPING COUGH.

There were 2 deaths from Whooping Cough, 1 in August and the other in October. Both were Chinese, aged 1 year and 8½ months. They were treated at home.

I show here the monthly incidence (Table XVII).

TABLE XVII.

DIPHTHERIA 1938.

Month.	Cases reported	Deaths
January	—	2
February	2	3
March	5	2
April	—	1
May	3	1
June	—	—
July	2	1
August	—	1
September	3	2
October	2	3
November	4	1
December	2	1
Total	23	18

TABLE XVIII

DIPHTHERIA IN PENANG MUNICIPALITY.

Year	Estimated population (mid-year)	Cases reported	Deaths
1909	102,520	1	1
1910	103,582	4	2
1911	101,182	2	1
1912	102,167	3	3
1913	102,913	3	2
1914	103,664	1	1
1915	104,420	2	2
1916	105,183	—	—
1917	105,950	4	4
1918	106,723	2	2
1919	107,502	4	3
1920	108,286	1	1
1921	123,187	5	4
1922	125,834	4	2
1923	128,300	4	4
1924	130,800	4	2
1925	133,373	8	6
1926	136,000	6	5
1927	138,635	8	5
1928	141,348	15	5
1929	144,114	11	5
1930	146,935	20	10
1931	149,964	23	9
1932	152,908	29	13
1933	156,014	46	15
1934	159,085	28	13
1935	162,217	39	18
1936	165,411	35	14
1937	168,667	29	10
1938	171,988	23	18

INFECTIOUS DISEASES HOSPITAL, PERAK ROAD.

229 patients and 52 contacts were admitted.

Details of disease and race are shown in Tables XIX and XX.

TABLE XIX.

Disease	Remaining on 31.12.37	Admitted	Total	Discharged	Transferred	Died	Remaining on 31.12.38
Chicken-pox	3	164	167	154	1	—	12
Measles	—	8	8	8	—	—	—
Mumps	—	51	51	51	—	—	—
Observation	—	6	6	5	1	—	—
Contacts	—	52	52	52	—	—	—
Total	3	281	284	270	2	—	12

TABLE XX.

Race	Remaining on 31.12.37	Admitted	Total	Discharged	Transferred	Died	Remaining on 31.12.38
Eurasians	—	1	1	1	—	—	—
Chinese	—	43	43	43	—	—	—
Malays	—	20	20	20	—	—	—
Indians	3	207	210	196	2	—	12
Others	—	10	10	10	—	—	—
Total	3	281	284	270	2	—	12

NOTE.

42 cases were admitted on personal application.

22. CONSERVANCY.

The cost of these services is largely governed by the number of occupied houses and the amount of refuse put out for collection. Every effort has been made during the year towards the economical working of these services without in any way affecting the reputation that Penang has earned for its cleanliness as compared with other cities in the East.

The amount of refuse collected during the year was 99,654 cubic yards, which is 374 cubic yards above the amount collected in 1937, but 19,476 cubic yards below the highest amount collected in any one year which was 1930.

At the end of the year the nightsoil service was being carried out to 9,402 latrines, an increase of 92 in spite of the fact that the service was discontinued to 502 latrines where water-closets had been substituted.

The comparative figures of Conservancy Revenue and Expenditure for 1937 and 1938 are:—

	1937	1938	Increase	Decrease
Revenue	\$177,322.41	\$178,096.66	\$774.25	—
Expenditure	\$296,472.26	\$277,056.44	—	\$19,415.82

Figures showing revenue and receipts for the past two years are given for comparison with expenditure table above:—

	1937	1938
Revenue from Night Soil collection ..	\$148,726.60	\$148,063.04
Revenue from Trade Refuse collection ..	27,216.36	29,909.37
Fines remitted from Police Court ..	1,379.45	124.25
	—————	—————
	\$177,322.41	\$178,096.66
	—————	—————

The large decrease in expenditure during the year is explained by the omission of several votes which were included in the 1937 expenditure. These are:—

(1) Insurance on Vehicles	\$10,015.00
(2) Running Cost of Night Soil Depot	2,173.58
(3) Night Soil Disposal	2,894.86
	—————
	\$15,083.44
	—————

The foregoing figures show that whilst revenue has been maintained, working economies have been effected during the year to the extent of over \$4,000 as compared with the previous year.

As in previous years obstructions were largely dealt with by the Conservancy Department. Very few summonses were taken out however as the results achieved by this method did not justify the amount of time taken up in Court etc. 31 people were summonsed and 29 convictions recorded, the average fine being \$2.30 as compared with \$9.65 the average fine obtained in 1937.

SCHEDULE OF EXPENDITURE

Scavenging					
Personal Emoluments	..	..	..	9,755.00	
Transport	..	..	..	2,753.25	12,508.25
Provident Fund	..	..	..	1,561.34	
Uniforms	..	..	..	178.66	
Telephones	..	..	..	48.00	
Water Supply	..	..	..	1,007.01	
Indian Immigration Assessment	..	..	..	2,938.59	
Miscellaneous	..	..	..	223.70	5,957.30
Wages for Divisional Overseers, etc.	..	..	..	4,144.00	
Coolies sweeping drains and loading refuse	}	..	..	77,330.86	
Coolies sweeping roads and loading refuse					
Hire of electric vans Nos: 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 21 and 22.	..	..	..	26,040.90	
Hire of motor vans Nos: 1, 2, 3, 5, 15, 16, 17, 18, 19, 20, 23 and 24.	..	..	..	25,648.55	
Hire of Dennis Street Washers Nos: 1 and 2	..	..	..	2,902.20	
Hire of motor road brooms Nos: 1 and 2	..	..	..	1,222.00	
Sundry Stores	..	..	..	5,868.70	
Scavenging Tubs	..	..	..	1,096.50	
Miscellaneous	..	..	..	1,279.68	
				145,533.39	
Less Credits Received	..	..	..	510.15	145,023.24
Total	..	..	..	163,488.79	

Nightsoil Collection					
Personal Emoluments	..	..	..	7,000.00	
Transport	..	..	..	1,461.67	8,461.67
Provident Fund	..	..	..	1,314.19	
Uniforms	..	..	..	317.66	
Telephones	..	..	..	48.00	
Water Supply	..	..	..	5,632.96	
Indian Immigration Assessment	..	..	..	571.50	7,884.31
Wages for Divisional Overseers	..	..	..	3,184.19	
Coolies loading, unloading and washing pails etc. on motor vans	..	..	..	37,642.96	
Value of pails used	..	..	..	11,017.59	
Repairs to pails	..	..	..	1,041.50	
Miscellaneous	..	..	..	300.20	
Sundry Stores	..	..	..	2,191.94	
Hire of Cesspool Emptiers Nos. 1 and 2	..	..	..	3,882.00	
Hire of S.D. Freighters Nos: 1, 2, 7, 8, 11, 12, 14 and 16				22,350.00	
Hire of Bedford Vans Nos: 3, 9, 10, 15, 19, 23 and 24	..	..	..	19,003.50	
				100,613.88	
Less Credits Received	..	..	..	3,392.21	97,221.67
Total	..	..	..	113,567.65	

23. SCAVENGING.

Daily scavenging was carried on throughout the year over the whole Municipal area. There was cessation of work only on 16th January and 22nd October for Thaipusam and Deepavali festivals.

With regard to refuse collection the following vans were used on scavenging service:—

12 Ransome Electric Lorries

7 Morris (one ton) Lorries

5 Bedford Lorries

This allowed one electric and one motor van to each of the 9 scavenging divisions, the remainder being held in reserve for use when vans in regular use were under repair or for any other emergency.

The extension of the area, wherein householders were required to provide their own refuse bins was continued during the year, and at 31st December 9489 premises were included in the area. In this area metal bins fitted with self-closing lids were placed for reception of drain refuse and street sweepings. It was still found necessary to use a number of half tar barrels as the supply of metal bins was inadequate, chiefly due to the fact that since the introduction of the new system more refuse is being thrown into drains by householders and this is a habit which will take many years to eradicate.

The number of half tar barrels used during the year was 1406.

The amount of refuse collected shows a slight increase over 1937, the figure being 99,654 cubic yards.

From the table given below of the amount of refuse removed annually since 1927 it will be seen that for the last three years the quantity of refuse produced has remained more or less stable:—

1927	..	..	107,716	cubic yards of refuse removed.
1928	..	..	113,748	„ „ „
1929	..	..	119,002	„ „ „
1930	..	..	119,130	„ „ „
1931	..	..	118,807	„ „ „
1932	..	..	113,746	„ „ „
1933	..	..	106,337	„ „ „
1934	..	..	106,927	„ „ „
1935	..	..	106,578	„ „ „
1936	..	..	100,735	„ „ „
1937	..	..	99,280	„ „ „
1938	..	..	99,654	„ „ „

The following table gives a more detailed record of the amount of refuse dealt with during 1938:—

1938	Electric Vans		One ton Motor Vans	
	Quantity in Loads	Quantity in Cubic yards	Quantity in Loads	Quantity in Cubic yards
January ..	1553	7299	1971	2365
February ..	1193	5607	1559	1871
March ..	1289	6058	1729	2075
April ..	1270	5969	1695	2034
May ..	1285	6040	1777	2132
June ..	1594	7492	2026	2431
July ..	1555	7308	1883	2260
August ..	1216	5715	1747	2096
September ..	1189	5589	1656	1987
October ..	1211	5691	1643	1972
November ..	1195	5617	1612	1935
December ..	1291	6068	1703	2043
Total ..	15841	74453	21001	25201

The comparison of the amount of refuse removed during recent years is shewn in graph (Appendix No. 1.).

The following table shows the work carried out during the year by the two Dennis Street Washers which worked nightly from midnight to daybreak except during the Wet Season:—

1938	Dennis No. 1		Dennis No. 2	
	Washing Gallons	Days Worked	Washing Gallons	Days Worked
January ..	58,400	29	42,200	29
February ..	457,600	25	382,800	22
March ..	365,200	21	344,300	21
April ..	136,400	10	121,000	10
May ..	—	—	—	—
June ..	259,600	13	209,000	13
July ..	436,700	22	422,400	22
August ..	303,600	16	300,300	16
September ..	—	—	—	—
October ..	—	—	—	—
November ..	12,100	1	—	—
December ..	220,000	11	220,000	11
Total ..	2,249,600	148	2,042,000	144

24. NIGHTSOIL COLLECTION.

The total of nightsoil pails collected during the year amounted to 2,011,934 which is a decrease of 119,202 from that of the previous year.

The following extract of figures shows the comparison of work with 1937.

	1937	1938	Increase	Decrease
No. of latrines dealt with Dec: 31st ..	9,310	9,402	92	—
No. of pails removed ..	2,131,136	2,011,934	—	119,202

The number of pails of nightsoil collected in previous years is shown in graph (Appendix No. 2).

The average number of latrines to which the service was applied was 9,423, being an increase of 47: these latrines were situated:—

In compulsory Area ..	..	8,961	
In Voluntary Area ..	..	462	
		<hr/> 9,423	<hr/>

The actual number of latrines to which the service was applied on December, 31st 1938 was 9402, being classified:—

Public latrines pails removed twice daily ..	..	..	106
Private .., .., .., .., .., .. ..	..	..	22
Public .., .., .., once .., .. ..	..	..	22
Private .., .., .., .., .., .. ..	..	..	708
Private .., .., .., on alternate days ..	..	..	8,544

The charge for daily collection was \$2.50 each per month and for alternate day collection \$1.25 per month.

Where back lanes are constructed nightsoil pails are removed from the latrines in the back lanes; but in older parts of the town where back lanes do not exist, it is necessary to carry the latrine pails through the houses.

	Dec: 1937	Dec: 1938	Increase	Decrease
Latrines cleared from back lanes or yards ..	7,541	7,589	48	—
Latrines cleared through houses ..	1,769	1,813	44	—

Wherever the nightsoil service is used the latrine pail is provided without additional charges to that quoted for removal. 2,109 new pails were issued while defective pails were repaired at the workshop as follows:—

General repairs ..	..	..	604
New rims fitted ..	..	..	347
Secondhand rims fitted ..	..	..	3,182

Transport.

The transport consists of:—

7 Bedford Vans, capacity 40 pails each,	Total ..	280
8 S.D. Freighters, ,,, 40 pails each,	Total ..	320
		600

At the beginning of the year there were 13 vans on regular nightly service, but it was found that by alteration and re-arrangement of the services, only 12 vans would be required, and this was the position at the end of the year. This was chiefly due to the fact that previously one area known as the "New Compulsory Area," comprising approximately 900 premises was given a daily service at the same rate as was normally charged for alternate day service. It was decided that as from 1st July this area should be placed on the same basis as the remainder of the Compulsory Area, namely a compulsory alternate day service at a charge of \$1.25 per month, with daily service at a cost of \$2.50 per month where found necessary or where desired.

In addition on the 1st June it was decided that the Compulsory Area should be extended to include Health Division 8 (the Pulau Tikus Area). This has resulted in the service being applied to approximately 500 latrines, not previously included.

During the year the staff was reduced by one overseer and 9 coolies.

25. PUBLIC LAVATORIES.

The following is a list of the Public Lavatories. At the end of the year these comprised 189 latrines in all of which 49 are W.C.'s, the remainder being bucket latrines:—

Ah Quee Street	18 with Bath
Argyll Road	2
*Bridge Street	10
Campbell Street Market	16 with Bath
Central Market	16 with Bath
Chowrasta Market	14 with Bath
*Dato Kraamat Gardens (behind Police Station)	2
*Duke Street	2
Esplanade Road	11
Jelutong Market	2 with Bath
Kampong Kolam	14 with Bath
Kanupong Malabar	12
*Malacca Street	4
Maxwell Road	8
*Municipal Office (near car shed)	4
Prangin Market	3 with Bath
Pulau Tikus Market	4 with Bath
Sikh Burial Ground, Western Road	2
Tek Soon Street	5
*Sungei Pinang (By P.W.D. Store)	2
Sungei Pinang (near Bridge)	2
*Weld Quay No. 1 (Near Market Street Ghaut)	10
Weld Quay No. 2	10
*Weld Quay No. 3 (near Prangin Road Ghaut)	10

*These lavatories are of the Water Carriage Type, constructed of glazed brickwork, each closet having an automatic flushing cistern and a small water tank for ablution.

Lavatories shown "with Bath" have a Public Bath House attached.

All lavatories having bucket latrines are washed down and sprinkled twice daily with Hypochlorite Solution. In the case of lavatories with Septic Tank Installations no disinfectant is used but the interiors of the buildings are cleansed thoroughly with water daily.

In the case of bucket latrines, pails are removed nightly by divisional vans and again between 10.00 a.m. and 1.00 p.m. by a van provided exclusively for public latrine work.

26. MARKETS.

The following alterations were made at the markets during the year.

Prangin Market.

The wooden partition facing Prangin Road of the Sundry Goods Shed was pulled down and replaced by a brick wall, and the wooden platforms and brick piers inside thoroughly overhauled. The six outside stalls were accommodated in this shed, and the space thus available was added to the open space let at daily rentals.

In addition the whole market was repainted and the roof repaired.

Chowrasta Market.

The rain water pipes and guttering around the main building were removed, and the market was whitewashed and painted throughout. A better water supply was provided for the use of stall holders.

At the other markets, repainting, colour-washing and minor repairs were carried out as found necessary.

Letting of stalls at 31st December 1938 was as follows:—

Market	No. of stalls	No. occupied	No. vacant
Chowrasta ..	185	178	7
Prangin ..	54	50	4
Central ..	42	27	15
Campbell Street ..	92	86	6
Dato Kramat ..	45	24	21
Pulau Tikus ..	16	11	5
Total ..	434	376	58

The floors and drains in and attached to Public Markets are washed with water and sprayed with Hypochlorite Disinfectant and kept as clean as possible.

The number of vegetable hawkers around Chowrasta Market increased to such an extent that it was found necessary to station a peon in Kuala Kangsar Road to keep it clear.

27. STREET STALLS.

During the year the number of licensed sites was reduced from 309 to 287. This was chiefly due to the cancellation of all sites within 25 feet of road junctons, as far as possible the dispossessed licencees being accommodated elsewhere.

Unlicensed stalls were fairly numerous and these were dealt with either by issue of warning notices or summonses if necessary.

The following table gives all licensed streets, showing the number of sites used and vacant on 1st January, 1939:—

Street	Vacant Pitches	Licensed Pitches	Total
Acheen Street Ghaut	..	—	4
Armenian Street Ghaut	..	—	7
Armenian Street	..	—	11
Campbell Street	..	—	39
Cecil Street Ghaut	..	—	2
Cheapside	..	—	18
Cintra Street	..	—	45
Dato Koyah Road	..	—	3
Kampong Malabar	..	—	13
Keng Kwee Street	..	—	8
Kimberley Street	..	—	98
Kuala Kangsar Road	..	—	10
Market Street Ghaut	..	—	2
Noordin Street Ghaut	..	—	1
Presgrave Street Ghaut	..	—	2
Queen Street	..	1	5
Rope Walk	..	—	11
Sungei Ujong Road	..	—	4
Tek Soon Street	..	—	3
	1	286	287

28. MEDICAL ATTENDANCES.

Medical advice or treatment was given to Municipal employees 17,177 times.

The total for 1937 was 14,846 and for 1936 was 13,457.

The number seen per month varied from 903 in February to 1,838 in May.

The number seen in the different departments were:—

Engineer 8,013, Health 5,735, Electrical 2,166, Fire Brigade 50, Jinricksha 27, Water 911, Secretariat 157 and Veterinary 118.

29. SALE OF FOOD AND DRUGS ACT, CHAPTER 191.

Most of the work under this Act is concerned with the control of supply of fresh milk. Each milk seller was examined as to his physical fitness before being licensed and in any case in which there were signs of disease which might be transmitted through milk, licensing was deferred or refused. At this examination, personal hygiene and the cleanliness of all milk containers and measures were scrutinized.

Throughout the year one whole-time milk inspector supervised the sale of milk. 20 suspected samples of milk were sent to the Government Analyst and of these 12 were found to be adulterated. All sellers of adulterated milk were prosecuted and convicted with the exception of one against whom a warrant of arrest was issued for non-attendance in court. 29 others were prosecuted and convictions obtained for offences against the by-laws and regulations.

The total amount in fines was \$501.00.

30. DESTRUCTION OF RATS.

In this work one assistant supervisor and six coolies were employed, their methods being direct slaughter after smoking out the runs, and to a less extent poison and traps.

By direct slaughter 6,512 rats were accounted for during the year.

31. WATER SUPPLY.

There was throughout the year an ample supply of good drinking water, the average daily consumption being 39 gallons per head, including water used for trade purposes and shipping.

32. FINANCIAL.

The total expenditure for the year was \$174,633.46.

This includes the Quarantine Camp, the Maternity and Child Welfare Work, Vaccination, Anti-Mosquito Work, all pay and allowances and the Commissioners donations to the Provident Fund of our staff.

The revenue was \$13,209.97 leaving \$161,423.49 as the cost of the department to the rate-payers.

This represents a rate of 3.013 per cent. or 7.231 pence in the pound sterling.

The estimated population being 171,988, the total cost of the department for the year per head of population is about 94 cents or about two shillings and two pence sterling.

33. LEAVE AND STAFF CHANGES.

Dr. E. W. Graham, Deputy Health Officer, proceeded on home leave on 14th August

Mr. J. E. Miller, Chief Sanitary Inspector, returned from leave and resumed duties on 31st July.

Miss F. M. Sloan, Health Sister, returned from leave and resumed duties on 3rd November.

Miss H. Flint, Health Sister, was granted six months leave prior to retirement from 19th December.

Dr. Yit Hou Hoashoo, Lady Assistant Medical Officer, ceased work on 30th April.

The undermentioned appointments were made:—

Miss G. M. Grieve, Health Sister, 16th June.

Miss Nundha Bhuaugboon, Health Nurse, 1st August.

Miss Soa Gek Ean, Health Nurse, 1st September.

Madam Lim Choo Tee, Caretaker, 1st July.

Idris bin Faji Sahak, Milk Inspector, 1st January.

George Laing, Assistant Supervisor, 9th February.

Neoh Seng Chee, Scavenging Overseer, 1st May.

Che Mat bin Ibrahim, Market Peon, 9th August.

Hassan bin Abdullah, Market Peon, 19th September.

The undermentioned resigned their appointments:—

P. Alexander, Nightsoil Overseer, 1st January.

Abdul Kader, Scavenging Overseer, 1st May.

Din bin Mirasa, Market Peon, 8th July.

Abdul Samad bin Abdul Rahman, Market Peon, 19th September.

Madam Ong Beh Loh, Caretaker, 1st July.

I wish to record my appreciation of the continued excellent work of the staff of this department.

I have the honour to be,

Gentlemen,

Your obedient servant,

W. H. BRODIE

Municipal Health Officer.

Penang, 21st June, 1939.

To

The Municipal Health Officer,
PENANG.

Sir,

I have the honour to submit the report of the work done by the staff during the year ending 31st December, 1938.

GENERAL SANITATION.

The staff made 23,396 inspections and 59,293 re-inspections, in which 1,521 premises were found defective and 1,615 dirty.

The following table shows how the notices were dealt with during the year.

Notices		Outstanding on 31.12.37	Unserved on 31.12.37	New notices issued 1938	New notices served 1938	Unserved on 31.12.38	Complied with in 1938	Work proceeding on 31.12.38	Cancelled in 1938	Brought forward to 1939
Nuisance	..	45	—	12	12	—	26	—	—	31
Lime Washing	..	14	1	174	175	—	163	—	1	25
Latrine	..	32	3	437	436	4	423	—	3	42
Drain	..	11	—	200	197	3	183	2	1	24
Filthy Premises	..	17	9	388	396	1	400	1	—	13
Common Lodging House	..	2	—	587	587	—	580	—	—	9
Trade	..	21	—	943	943	—	908	—	25	31
Bakery, Cook Shop and Eating House	..	174	—	777	777	—	928	—	—	23
By-Law	..	14	—	202	202	—	204	1	1	11
Well	..	1	—	11	11	—	8	—	—	4
Partition	..	59	—	279	277	2	275	2	2	59
Open Space	..	16	1	110	111	—	104	—	1	22
Mosquito Order	..	30	—	131	131	—	140	3	1	20
Rat	..	2	—	10	10	—	11	—	—	1
Disinfection	..	—	—	505	505	—	504	—	—	1
Sanitary Installation	..	—	—	18	18	—	18	—	—	—
Insanitary Premises	..	—	—	14	14	—	6	—	—	8
Boarding House	..	9	—	42	42	—	51	—	—	—
Total	..	447	14	4840	4844	10	4932	9	35	324

35 notices were cancelled for various reasons.

26 nuisance notices were complied with during the year. These dealt with 79 houses of which 31 were structurally altered to provide light and ventilation, and 48 were either closed or demolished.

Complaints were received daily, many of them anonymous and all were investigated and dealt with.

WELLS.

11 notices under Section 254 of the Municipal Ordinance were served and 1 brought forward from 1937. 8 notices were complied with resulting in the closing of a like number of wells, and 4 were carried forward to 1939.

CEMETERIES.

The Sub-Inspector in charge made 279 visits to the cemeteries.

EXHUMATIONS.

26 applications were received during the year and 2 brought forward from 1937, all of which were approved.

26 bodies were exhumed under special licence and the remaining number was carried forward to 1939.

PASSENGERS.

94 passengers arrived from infected ports and were kept under observation by the staff as against 297 last year.

PLANS.

340 plans submitted for approval by the Commissioners were examined in this office as against 339 last year.

PROSECUTIONS.

196 summonses were issued during the year	184 convictions
94 were brought forward from 1937	16 withdrawn
	1 discharged
	89 carried forward
Total 290	Total 290

3 Abatement of Nuisance and 2 Mandatory Orders were obtained.

The fines imposed by the Magistrate amounted to \$1,617.50 as against \$1,177.00 the previous year.

DISINFECTIONS.

560 houses were disinfected during the year for the following causes:—

Tuberculosis	..	..	..	323
Diarrhoea	..	..	..	64
Chicken-pox	..	..	..	54
Enteritis	..	..	..	42
Enteric Fever	..	..	..	33
Dysentery	..	..	..	20
Diphtheria	..	..	..	19
Beri Beri	..	..	..	3
Mumps	..	..	..	1
Cerebro-Spinal Fever	..	..	..	1
Total	..	..	..	560

The houses disinfected being distributed as follows:—

TUBERCULOSIS:—Beach Street, Rope Walk and Presgrave Street (10 each); Campbell Street, Armenian Street, Bridge Street and Magazine Road (9 each); Perak Road, Penang Road and Chulia Street (8 each); Hutton Lane, Muntri Street, Kuala Kangsar Road and Noordin Street (7 each); Maxwell Road, Malay Street, Brick Kiln Road and Burmah Road (6 each); West Jelutong, East Jelutong, Victoria Street, Katz Street, Carnarvon Street, Macalister Road, Pitt Street and Jelutong Road (5 each); King Street, Acheen Street, Kedah Road, Ayer Itam Road, Cecil Street, Dato Kramat Road, Prangin Lane and Prangin Road (4 each); Weld Quay, Tye Sin Street, Stewart Lane, Jahudi Road, Lorong Slamat, Penang Street, Sungai Pinang, Transfer Road, China Street and Bishop Street (3 each); Chowrasta Road, Church Street, Sungai Pinang Road, Popus Lane, Soo Hong Lane, Kimberley Street, Aboor Sittee Lane, Carnarvon Lane, Seck Chuau Lane, Merican Road, Bertam Lane, Green Lane, Cintra Street, Kampong Malabar, Edgecumbe Road, Perak Lane, Gemas Road, Patani Road, Seang Tek Road and Sungai Ujong Road (2 each); Muda Lane, Chin Ho Square, Ipoh Lane, Traug Road, Pahang Road, Lunut Lane, McCallum Street, Keng Kwee Street, Hong Kong Street, Madras Lane, Sri Bahari Road, Kinta Lane, Chulia Street Ghaut, Buckingham Street, Irving Road, Kajang Road, Halfway Road, Toh Aka Lane, Cantonment Road, Khoo Sian Ewe Road, New Lane, Klang Street, Larut Road, Nagore Road, Service Road, Prangin Road Ghaut, Dato Koyah Road, Burmah Lane, Market Street, Batu Lanchang Road, Kelawai Road, Argyll Road, Market Lane, Kuantan Road, Western Road, Queen Street, Tek Soon Street, Westlands and Barrack Road (1 each).

DIARRHOEA:—Bridge Street (8); Jelutong Road and West Jelutong (3 each); Patani Road, Carnarvon Street, Lorong Saratins Tahon, Jahudi Road, Gladstone Road, Chulia Street, Kimberley Street, Beach Street and Dato Kramat Road (2 each); Noordin Street, McCallum Street, Batu Gantong Road, Kinta Lane, Kedah Road, Burmah Road, Muntri Street, Perak Road, China Street, Tek Soon Street, Ayer Itam Road, Cross Street, Acheen Street, Trusan Road, Irving Road, Amoy Lane, Hutton Lane, Batu Lanchang Road, Bangkok Lane, Macalister Road, Tye Sin Street, Cannon Square, Tanjung Tokong Road, Green Lane, Kuala Kangsar Road, McNair Street, Chow Thye Road, Magazine Road, Maxwell Road, Kampong Java Bharu, Armenian Street and Brick Kiln Road (1 each).

CHICKEN-POX:—King Street (7); Kinta Lane (5); Penang Road and Perak Road (3 each); Patani Road, Farquhar Street, Jahudi Road, Green Lane and Campbell Street (2 each); Batu Lanchang Road, Halfway Road, Queen Street, Dato Koyah Road, Lorong Slamat, Bangkok Lane, Cantonment Road, Brick Kiln Road, Katz Street, Western Road, Toh Aka Lane, Biggs Road, Ayer Itam Road, Batu Gantong, Merican Road, Gladstone Road, Irving Road, Macalister Road, Burmah Road, Kedah Road, Penaug Street, Bridge Street, Chowrasta Road, Coolie Lines Road and East Jelutong (1 each).

ENTERITIS :—West Jelutong (5); East Jelutong, Campbell Street, Rope Walk, Bridge Street, Presgrave Street, Noordin Street and Brick Kiln Road (2 each); Muda Lane, Tongkah Road, Magazine Road, Sungei Pinang Lane, Perak Road, Market Lane, Carnarvon Lane, King Street, Scotland Road, Kuantan Road, Stewart Lane, Chulia Street, Sungei Pinang Road, Gemas Road, Ceylon Lane, Jelutong Road, Trusan Road, Malay Street, Transfer Road, Irving Road, Tye Sin Street, Jahudi Road and Dato Kramat Road (1 each).

ENTERIC FEVER :—Penang Street (3); Bridge Street, Presgrave Street, York Road, Brick Kiln Road and Dato Kramat Road, (2 each); Cintra Street, College Square, Magazine Road, Chulia Street, Hong Kong Street, Gladstone Road, Stewart Lane, Burmah Road, Gaol Road, Sungei Ujong Road, McNair Street, Batu Lanchang Road, Perak Road, Seang Tek Road, Kelawei Road, Beach Street, Hospital Road, Waterfall Road, Kimberley Street and Tye Sin Street (1 each).

DYSENTERY :—West Jelutong (3); Perak Road and Chulia Street (2 each); Prangin Road, Rope Walk, Armenian Street, Toh Aka Lane, Jelutong Road, Queen Street, Kelawei Road, Rangoon Road, Burmah Road, Buckingham Street, Cannon Street, Tamil Street and Kuala Kangsar Road (1 each).

DIPHTHERIA :—Malacea Street (2); College Square, Jelutong Road, Katz Street, Cintra Street, Perak Road, Aboo Sittee Lane, Lorong Salamat, McCallum Street, Kuantan Road, Campbell Street, Macalister Lane, Beach Street, Gladstone Road, Krian Road, Carnarvon Street, Kedah Road and China Street (1 each).

BERI-BERI :—McNair Street, Seh Tan Court and Victoria Street (1 each).

MUMPS :—Gladstone Road (1).

CEREBRO-SPINAL FEVER :—Kampong Malabar (1).

TRADES.

The fees collected during the year for trade licences amounted to \$8,288.70 as against \$8,283.80 the previous year, an increase of \$4.90.

COMMON LODGING HOUSES.

599 common lodging houses were licensed during the year as against 593 in 1937 and the fees collected amounted to \$1,281.20 as against \$1,274.90, an increase of 6 houses and \$6.30 in fees.

128 licensed common lodging houses in divisions I & V and in special cases where there was reason to suspect gross overerowding were visited in the small hours of the morning on May 1st and July 20th. 72 houses were found to be overcrowded to an extent of more than 10%. The keepers of these houses were prosecuted and fines totalling \$881.50 were imposed. 8 houses were overcrowded to an extent of more than 100% above the number for which they were licensed, the worst case being an excess of 288%.

These raids have been a regular feature of the work for many years but from the figures given below one is forced to the conclusion that the results achieved, apart from being a steady source of revenue, have been disappointing.

The figures for the last five years are as follows:—

	No. of houses inspected	Excess persons	Percentage of overcrowding
1934	78	545	32.59
1935	269	1708	32.06
1936	149	865	27.66
1937	29	276	53.00
1938	128	827	28.80

During this period fines amounting to \$6,502.50 have been imposed. For the keepers of these houses I have no sympathy. They are prepared to take the risk of a prosecution and a fine, in most cases all too inadequate for the offence they have committed, but it is inconceivable that human beings would live under conditions endured by the sub-tenants unless it was forced on them by economic necessity.

It appears that the only thing that can alleviate this overcrowding is a bold programme of building designed to provide simple and reasonable accommodation (perhaps only one room) for these people whose income necessitates a limit of about \$5 per month for rent and further, this accommodation must be provided centrally where the workers are close to their work and where the housekeeper is close to the cheap shopping centres.

MILK.

198 milk-sellers were registered in 1938, as against 201 in 1937.

6,875 lactometer tests were made during the year, 20 samples being sent to the Government Analyst, 12 of which were returned as being below standard.

41 summonses were issued, 12 for selling adulterated milk and 29 for offences against the bye-laws and regulations.

61 were brought forward from 1937.

Total 102

38 convictions were obtained.

6 were carried forward to 1939

58 summonses have been accumulated over a number of years against milk-sellers who cannot be traced.

Total 102

Fines amounting to \$501.00 were imposed as against \$196.00 in 1937, an increase of \$305.00.

VACCINATIONS.

Our vaccinators did 4,810 primary and 140 secondary vaccinations. 1,500 tubes of lymph were used at a cost of \$375.00.

1,448 primary vaccinations were performed at the Lnn Hna Ee Hospital by one of our vaccinators.

Private practitioners performed 464 primary vaccinations.

The Government vaccinator did 2,719 secondary vaccinations within Municipal limits.

RATS.

The gang of rat-catchers caught and destroyed 6,512 rats during the year by means of smoking, trapping and the use of poison.

ANTI-MOSQUITO WORK.

Four anti-mosquito gangs worked during the year, cutting down vegetation, digging, levelling and clearing ditches in "reserve roads" within Municipal limits. They also carried out works at the request and at the expense of owners. All streams were cleared when necessary and, as in previous years, particular attention was paid to the stream at the Chetty Temple during the Thaipusam Festival.

The oiling gangs under supervisors regularly oiled all ditches, swamps and streams within Municipal limits and the Race Course, and Kelawai Road, Bagan Jermal, Mount Ers-kine, Western Road, Waterfall Road and Scotland Road including the foothills to Kampong Bharu, Batu Gantong and foothills, Caunter Hall, Perak Road, East and West Jelutong and Jelutong Village, Bukit Dunbar, Perak Lane, Burmah, Anson, Larut, Gottlieb, Sungai Pinang, River, Patani, Jelutong and Batu Lanchang Roads.

84,800 gallons of anti-malarial oil were used, the cost being \$14,575.00

At the request of certain owners work was done on private property and the income from this source was \$1,182.70.

STAFF.

I was on home leave until 31st July.

George Laing was appointed Assistant Supervisor on 9th February in place of Idris bin Haji Sahak who was promoted Milk Inspector.

It is my pleasure to acknowledge the excellent work and co-operation of the staff.

I have the honour to be,

Sir,

Your obedient servant,

J. E. MILLER

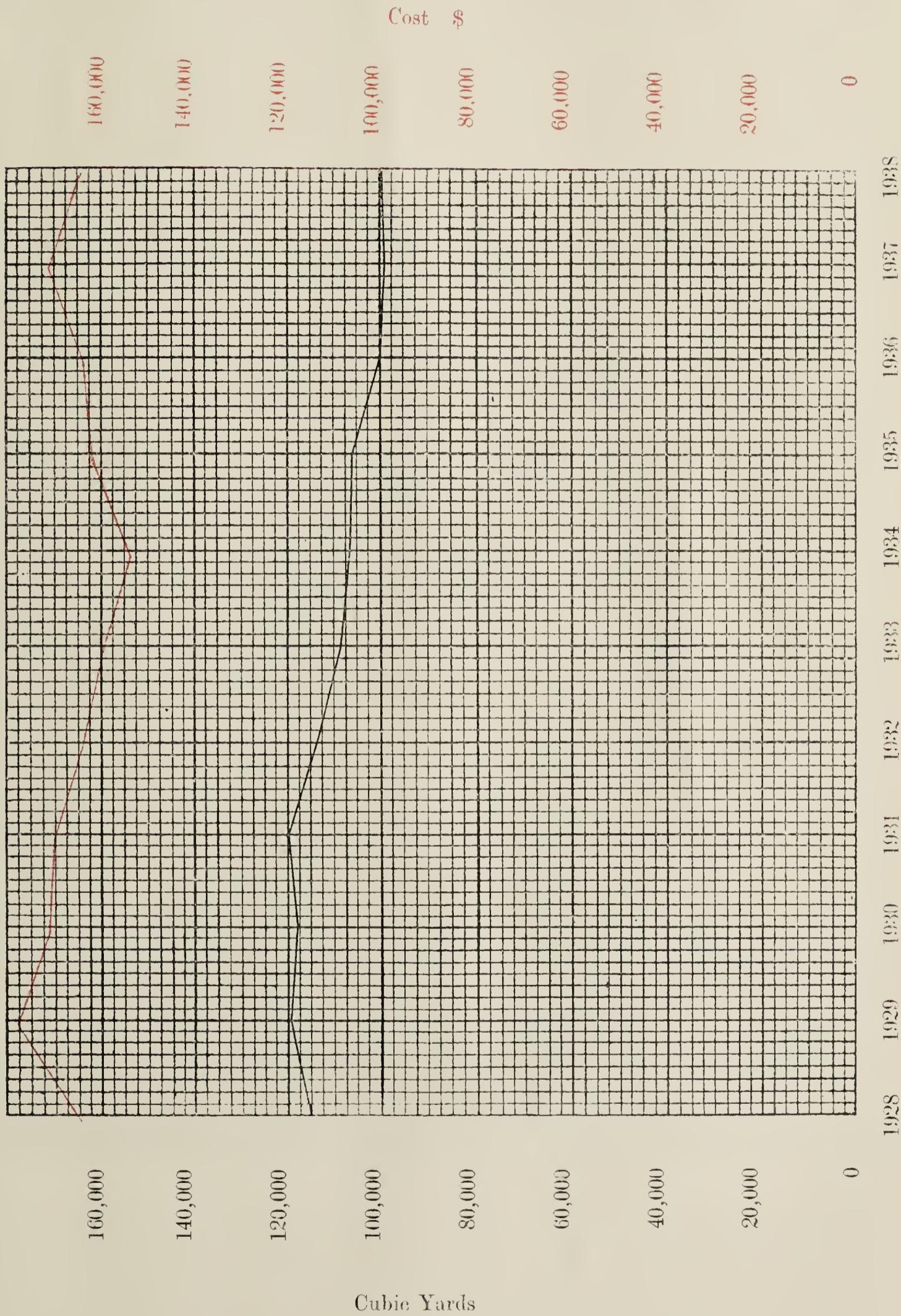
Chief Sanitary Inspector.

Prosecutions	Brought forward from 1937	Issued in 1938	Cases in Court	Convictions	Withdrawn	Discharged	Abatement of Nuisance Order	Mandatory Order	Total orders obtained	Fines		Costs	
										s.	c.	s.	c.
Nuisance Notice ..	2	3	4	3	1	—	3	—	3	5	00	1	50
Abatement of Nuisance Order ..	4	—	3	—	3	—	—	—	—	—	—	—	—
Closing Order ..	5	—	5	—	5	—	—	—	—	—	—	—	—
Partition ..	2	4	5	5	—	—	—	2	2	4	00	2	50
Open Space ..	1	2	3	3	—	—	—	—	—	16	00	1	50
Trade ..	—	13	13	13	—	—	—	—	—	28	00	6	50
Unlicensed Common Lodging House ..	3	13	14	13	—	1	—	—	—	61	00	6	50
Breach of By-laws re Bakery, etc. ..	12	18	21	15	6	—	—	—	—	62	00	7	50
Breach of By-laws re C. L. House ..	1	2	3	3	—	—	—	—	—	15	00	1	50
Breach of By-laws re Pig-keeping ..	—	15	8	8	—	—	—	—	—	17	00	4	00
Mosquito Order ..	—	4	3	3	—	—	—	—	—	12	00	1	50
Milk Regulation ..	61	41	38	38	—	—	—	—	—	496	00	64	00
Birth ..	2	7	7	6	1	—	—	—	—	8	00	3	00
Death ..	1	2	2	2	—	—	—	—	—	10	00	1	00
Infringing terms of C. L. H. Licence ..	—	72	72	72	—	—	—	—	—	881	50	36	00
Breach of By-laws re Boarding House ..	—	1	1	1	—	—	—	—	—	2	00	—	50
Total ..	94	196	201	184	16	1	3	2	5	1617	50	137	50

Licences Issued	1938			1937			Increase		Decrease				
	No.	Fees		No.	Fees		No.	Fees		No.	Fees		
		\$	c.		\$	c.		\$	c.		\$	c.	
Attap Depot ..	12	36	00	13	39	00	—	—	—	1	3	09	
Bakery ..	21	105	00	20	100	00	1	5	00	—	—	—	
Bone Storing ..	3	36	00	3	36	00	—	—	—	—	—	—	
Brazier ..	7	14	00	5	10	00	2	4	00	—	—	—	
Blachan Storing ..	1	12	00	1	12	00	—	—	—	—	—	—	
Blacksmith ..	19	38	00	19	38	00	—	—	—	—	—	—	
Coal Depot ..	2	24	00	2	24	00	—	—	—	—	—	—	
Cook Shop ..	186	930	00	188	940	00	—	—	—	2	10	00	
Charcoal Depot ..	23	138	00	22	132	00	1	6	00	—	—	—	
Candle Making ..	11	88	00	13	104	00	—	—	—	2	16	00	
Cattleshed ..	14	56	00	14	56	00	—	—	—	—	—	—	
Cowhouse ..	38	192	00	42	184	00	—	8	00	4	—	—	
Dyeing House ..	3	30	00	4	40	00	—	—	—	1	10	00	
Dairy ..	1	6	00	2	12	00	—	—	—	1	6	00	
Eating House ..	747	3735	00	743	3715	00	4	20	00	—	—	—	
Fresh Fish ..	1	5	00	1	5	00	—	—	—	—	—	—	
Fresh Meat ..	27	135	00	30	150	00	—	—	—	3	15	00	
Fish Storing ..	38	456	00	36	422	00	2	24	00	—	—	—	
Foundry ..	9	18	00	9	18	00	—	—	—	—	—	—	
Hides Curing ..	5	60	00	5	60	00	—	—	—	—	—	—	
Hides Storing ..	1	12	00	1	12	00	—	—	—	—	—	—	
Hay Storing ..	3	9	00	4	12	00	—	—	—	1	3	00	
Kajang Storing ..	5	15	00	6	18	00	—	—	—	1	3	00	
Market Garden ..	92	—	—	93	—	—	—	—	—	1	—	—	
Milkseller ..	198	198	00	201	201	00	—	—	—	3	3	00	
Pig Sty ..	556	1112	00	562	1124	00	—	—	—	6	12	00	
Pepper Washing ..	1	10	00	1	10	00	—	—	—	—	—	—	
Pottery Making ..	—	—	—	1	2	00	—	—	—	1	2	00	
Rag and Feather Storing ..	5	60	00	6	72	00	—	—	—	1	12	00	
Sugar Boiling ..	8	48	00	7	42	00	1	6	00	—	—	—	
Soap Making ..	13	104	00	11	88	00	2	16	00	—	—	—	
Sheep or Goats ..	12	30	70	12	31	80	—	—	—	—	—	1	10
Tannery ..	10	240	00	10	240	00	—	—	—	—	—	—	
Wood Depot ..	56	336	00	54	324	00	2	12	00	—	—	—	
Common Lodging House ..	599	1281	00	593	1274	90	6	6	30	—	—	—	
Boarding House ..	56	56	00	45	45	00	11	11	00	—	—	—	
Total ..	2783	9625	90	2779	9603	70	32	118	30	28	96	10	

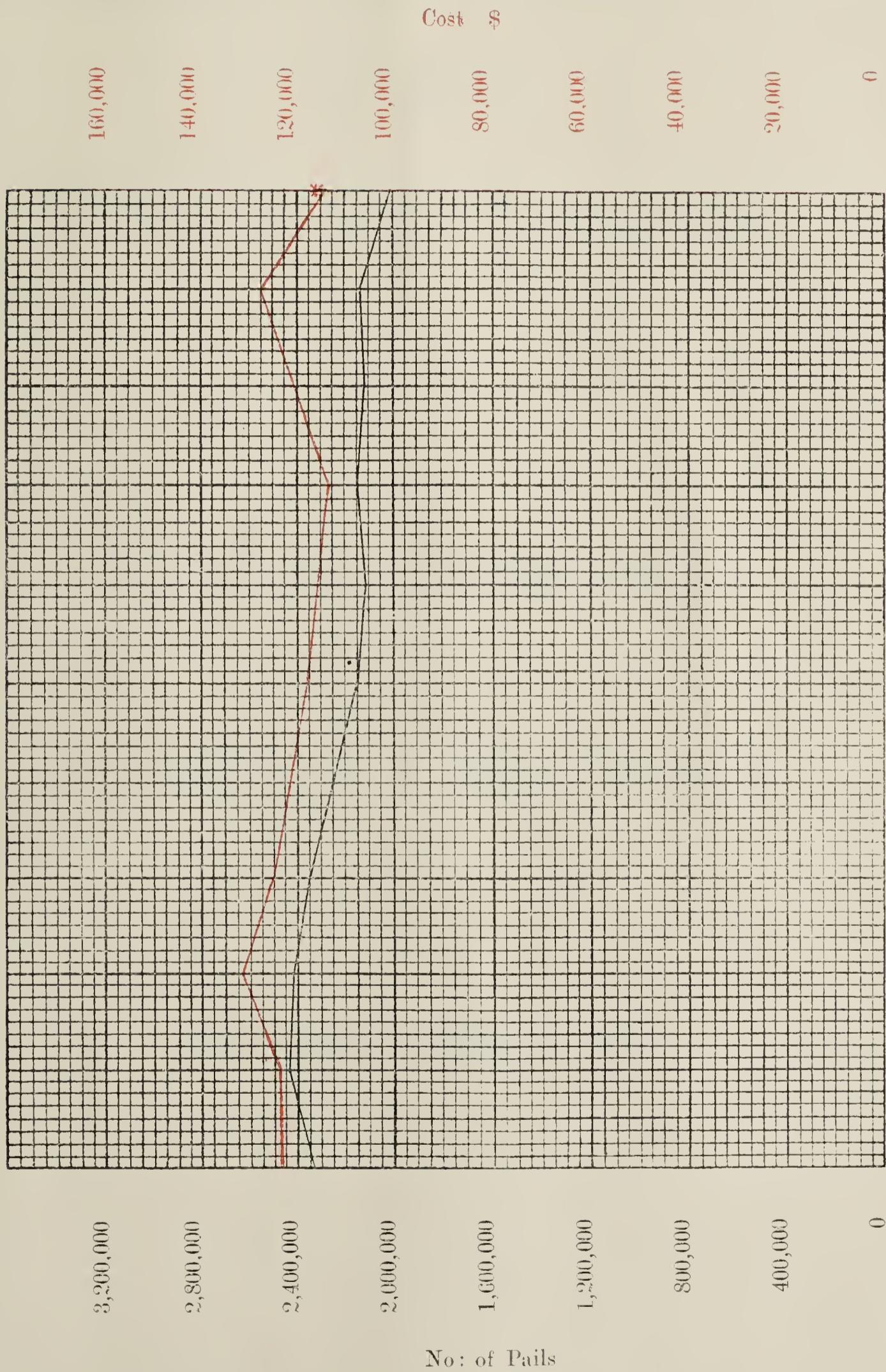
APPENDIX No. I.
REFUSE COLLECTION.

Graph Showing Comparative Annual Cost and Amount of Refuse Collected.



APPENDIX No. II.
NIGHTSOIL COLLECTION.

Graph Showing Comparative Annual Cost and Number of Pails Collected.



*Excluding Expenditure for Running Cost of Nightsoil Depot and Nightsoil Disposal charge against M. E. Department.

